Adjusting headlights

HAVING TROUBLE SEEING IN THE DARK? Then the chances are your headlights are out of alignment. Here’s how to set yourself straight.

This is one of those common procedures that is easily overlooked yet will pay great dividends if you sort out, because driving at night with poorly adjusted or bad headlights is an unnecessary hassle you shouldn’t be prepared to put up with.

Firstly, you need to find out what headlights you have – are they six or 12-volt? Sealed beam or removable bulb? If your Beetle is still six volt (all Beetles except ’67 1500s built before 1968 were six volt originally) then I’m afraid you are stuck with perilously dim headlights, but checking and cleaning all the connections with a brass brush (including those in the fuse box), ensuring all your wiring is in good working order and dismantling and cleaning your headlights is a good start. New six-volt bulbs are readily available but don’t expect to find them in your local car accessory shop, that’s what the VW specialists are for.

If you have 12-volt electrics then you are already one step ahead but again, it won’t hurt to work through the headlight circuit and check it’s all in good order first. Original VW headlights used a single filament sidelight and a three-prong, dual filament headlight bulb which is held in the back of a reflector by clips. The beam pattern is then produced by the patterning of the glass lens itself. There are many different types of similar looking bulb, so be sure to buy the appropriate ones for your car.

In America sealed beam headlamps were made mandatory way before they were commonplace in Europe. They’re generally brighter, certainly maintenance free and, as they’re sealed, don’t suffer from moisture and dirt ingress in the way the old-style lamps do so stay bright until the day they fail. The downside is you cannot replace bulbs, you have to replace the headlight unit complete, but that’s not as expensive as it sounds. Figure on about £45 each for late model Hella ones. Note that apart from early cars (up to about 1959) which had symmetrical lens patterns headlamps and lenses came in right and left-hand drive so make sure you have right-hand drive lamps fitted to a car that is to be used in the UK.

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TOOL TIP: No fancy tools needed here, just a couple of screwdrivers.
Q: Should I upgrade to halogen bulbs?
A: Yes, but don’t go for ‘white’ lights or gimmick bulbs as they’re just for chavs.

The procedure for adjusting headlights is simple, but you’ll need a flat piece of land with a wall or similar in front. A driveway and a garage door is ideal, but you won’t be able to see things clearly in daylight, so do this at dusk when you’ll be able to see the beam pattern. The picture above shows a standard 6-volt car’s headlight pattern. There’s not much definition but the beam centres are in the right positions and level with one another, so this is good enough to go for an MoT.

MOT REQUIREMENTS:
This is what the book says – headlights must be a matched pair, solidly mounted, must not flicker or otherwise be intermittent and must illuminate or dip together the same amount. If you want to see the specific beam pattern requirements that MoT inspectors work to then look up http://www.motuk.co.uk/manual_160.htm

MoT garages have special equipment for checking headlamp beam patterns and you’ll generally find with older cars, all but the most pernickety testers will allow some leeway provided the headlights aren’t such that they could dangerously dazzle oncoming cars. It is actually written into the testers handbook that they may perform ‘some minor adjustments’ during the test so use this guide to set them up as best you can and get on good terms with your friendly local MoT inspector, who can do the final adjustment for you.

One thing they don’t like though is any kind of coloured bulbs, so stick with standard bulbs. Front indicators sited inside the headlights was a common custom modification in the past but one that’s less seen today. All we’ll say is this could earn you a fail certificate as technically the indicators should be separate from the headlights.

The thing to get your head round is the way the adjusting screws work. Early European-speccing headlight cars (above) used either Bosch or Hella lamps with fluted outer glass. Bosch ones have an adjusting screw through the trim ring at 12 o’clock for up and down movement and another at 9 o’clock for side to side movement. Hella units had the up and down adjuster at 8 o’clock and the side to side at 4 o’clock. Both were factory fit.

So-called US-spec headlights (above) have a clear outer lens and a sealed beam lamp inside with the adjusters in a similar position to that of the Hella versions. Note this lamp has been fitted with an indicator inside the headlight bowl. As we were unable to find a definitive answer as to whether this is legal or not (and we know plenty of people have got cars like this) we’ll just say this is a grey area as far as the MoT goes, but you’ll probably get away with it.

Late model cars with upright headlamps can have either normal or sealed beam lamps. With the latter there will only be one screw in the trim ring which, when removed, will reveal adjusting screws at 2 o’clock and 7 o’clock. Non-sealed beam lamps have the adjusters in the same positions but accessible through the trim rings.

The picture to the right shows a 12-volt car with sealed beam headlights. You can immediately see how much better they are than the old 6-volt versions above and also the correct beam pattern for a UK car.

When you turn your headlamps on, the headlamp beams should be centred on the crosses on the wall, with the kick ups starting approximately two inches above the horizontal line and rising to the left as shown so they illuminate the nearside of the road and don’t dazzle oncoming cars. This is not an exact measurement, but it should get you in the rough ballpark so your car does not fail the MoT and can be fine tuned by the MoT inspector.

Only adjust one headlight at the time, with the other one covered up. If you can’t see any movement of the beam when the screws are turned the connections inside the headlights have probably come apart so you may have to dismantle them and rectify this first.